Contents

	Form Approved OMB No. 0704-0188
Report Documentation Page	

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE **1995**	2. REPORT TYPE	3. DATES COVERED **00-00-1995 to 00-00-1995**

4. TITLE AND SUBTITLE **Journal of Policy Modeling: A Social Science Forum of World Issues Volume 19, Number 4: Excessive Defense Expenditures and Economic Stabilization: The Case of Pakistan**	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Naval Postgraduate School,Monterey ,CA**	8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**27**	

Excessive Defense Expenditures and Economic Stabilization: The Case of Pakistan

Robert E. Looney, *Naval Postgraduate School, Monterey, California*

INTRODUCTION

Toward the end of 1988, Pakistan's deteriorating resource situation caused a financial crisis, many remnants of which still exist today. In 1988 the government's budget deficit reached 8.5 percent of Gross Domestic Product (GDP), inflation accelerated, the current account deficit doubled to 4.3 percent of Gross National Product (GNP), the external debt service ratio reached 28 percent of export earnings, and foreign exchange reserves fell in half, to $438 million, equal to less than 3 weeks of imports (World Bank, 1991).

These developments have eroded the ability of the government to affect the country's development process. In fact, the encouragement of private-sector activity, particularly investment, is the only viable option open to the authorities. It follows that for policy purposes the most important issue involves restructuring government expenditures and their financing in a manner that would provide the maximum inducement to private-sector capital formation, especially in manufacturing. Operationally, this means finding an optimal balance between the government's three most important budgetary items: defense, public consumption, and infrastructural development. What is more important, because there is abundant evidence[1] that the government's deficits have crowded out a certain amount of private investment, the authorities must achieve this balance within the context of a reduced level of expenditures, tax increases, or both.

---

[1] See, for example, Kemal (1989), Burney and Yasmeen (1989), Khan and Iqbal (1991).

Defense expenditures are an obvious candidate for expenditure reductions. As noted in the next section, the country's defense burden is one of the heaviest in the world. At around 7 percent (1992) of Gross National Product (GNP), it is more than twice that of India. Moreover, while over recent years global defense expenditures have been declining, Pakistan's has expanded: From 5.4 percent of GNP in 1980, it reached 6.8 percent in 1985.

While the defense-expenditure-to-GNP ratio has remained about the same, debt servicing has overtaken this category as the single largest item of government spending. In 1971, this item was 3 percent of GNP; by 1993–94, it had risen to 8.2 percent. During fiscal 1994–95, debt servicing will account for 8.2 percent or 35 percent of total budget spending (Blum, 1994), compared with 26.4 percent for defense (Rashid, 1994). Apparently the government recognizes the burden that defense expenditures have placed on the economy. For the 1994–95 budget, defense expenditure will increase only 8.6 percent, even though in the previous year India increased defense expenditures by 20 percent (Bokhari, 1994).

Against this background the purpose of this paper is to examine Pakistan's macroeconomic prospects for the remainder of the 1990s. In particular (and assuming it politically possible), we are interested in examining the scope for stimulating economic growth and expansion through restrained allocations to the military.[2] What impacts have defense expenditures had on the economy? Are these impacts largely direct, or have they operated primarily through their effect on the budgetary deficits? In this regard, defense expenditures are a logical area for budgetary cuts: Current expenditures account for the major part of government budgetary allocations, averaging 65–75 percent during most of the 1980s and into the 1990s. In recent years, defense expenditures together with debt servicing have accounted for around 80 percent of current expenditures.

PATTERNS OF DEVELOPMENT

While facing a number of serious macroeconomic constraints, Pakistan's overall economic performance in the 1980s and into the 1990s has been relatively good compared with that of most developing countries. While the country grew at the average (4.9%

---

[2]Hopefully this policy would be complemented by some of the innovative reforms outlined in Ahmed (1994).

per annum) rate for developing countries during the 1970s, during the 1980–91 period the economy expanded at an average annual rate of 6.1 percent. This compares very favorably with a developing average of 2.8 percent for the same period. If we compare Pakistan's economic structure and performance (during 1980–91) to other high-growth countries (those above the mean of 2.8%), several other interesting patterns stand out:

- Government consumption rose rapidly during the 1980s, averaging 9.1 percent per annum. For other high-growth developing countries, this figure averaged 0.5 percent per annum.
- Pakistan's inflation was about half that of other high-growth countries (7.0% versus 14.0%).
- Pakistan's growth during the 1980s occurred although the country had increased investment at a rate about one half that of other high-growth countries during the 1970s. However, during the 1980s, Pakistan's expansion of capital formation was considerably above (5.6% versus 3.6%) that of the high-growth group.
- Despite the country's superior growth rate during the 1980s, Pakistan's imports expanded at a rate significantly below (2.6% versus 4.0%) that of other high-growth developing countries.
- In terms of the composition of demand, Pakistan differs from other high-growth countries in that it has a very low savings rate (12.0% versus 17.1% for the high-growth countries). Also, Pakistan's exports account for only 16.0 percent of GNP, while this figure is around 27 percent for the high-growth countries.
- While government expenditures in Pakistan are relatively low for a high-growth country (21.9% versus 31.1%), its defense expenditures account for a much higher proportion of the budget (27.9% versus 12.5%).
- Pakistan started off the 1980s with a debt structure (share of GNP) was slightly above (42.4% versus 39.7%) that of other high-growth developing countries. However, its external debt as a share of GNP was considerably below the high-growth norm by 1991 (50.1% versus 72.1%).
- In contrast, Pakistan began the 1980s with a ratio of external debt to exports considerably higher (208.8% versus 149.7%) than that of other high-growth countries. While this ratio grew during the 1980s, that of the high-growth countries expanded

even faster, so that by 1991 each had external debt burdens of 244.9% of current exports.

- Finally, relative to other high-growth countries, a much larger proportion of Pakistan's external debt is in the form of concessional loans. While the proportion of Pakistan's loans that were concessional fell somewhat in the 1980s, this type of loan accounted for over half of the country's external debt. The corresponding figure for other high-growth countries was 41.5 percent. Interestingly, the ratio for the low-growth countries was only 35.0 percent in 1991.

Summing up, while one cannot infer causation from cross-sectional analysis of this type, several patterns are suggestive as to the mechanisms characterizing Pakistani growth in the 1980s. First, the country seems to have been able to expand without contracting an excessive amount of external debt. This may have resulted from the fact that the government controls a relatively small share of resources. Second, it appears that the country was able to divert concessionary funding loans into military expenditures. If this is the case, it would partially explain why the country's overall economic performance has been good despite the unusually large share of the budget devoted to defense.

PREVIOUS STUDIES ON DEFENSE SPENDING AND THE MACROECONOMY

While a comparative perspective provides some insights as to the workings of defense expenditures and the macroeconomy, a full understanding can come only through looking at these relationships over time. In this regard, several studies have examined the manner in which Pakistani defense expenditures have interacted with various macroeconomic aggregates. These studies can be roughly broken into four types: (1) *Causation Analysis,*[3] where an attempt is made to assess whether defense expenditures initiate economic change or, in contrast, are affected by changes in the macroeconomy; for example, do increases in defense expenditure cause a follow-on change in the economy, or instead, do economic changes result in movements in defense funding? (2) *Linkage Identification*, where the strengths of the identified causal patterns

---

[3] An excellent review of causality concepts and the methods used to test for causal relationships is found in Zellner (1988). See also Granger (1988). The tests reported here are all of the Granger type.

are estimated; that is, how much does a rupee of defense expenditures alter GDP over time? (3) *Budgetary Priority Analysis*, where expenditure priorities and budgetary tradeoffs are identified, and (4) *Modeling*, where, drawing on 1, 2, and 3, defense expenditures are examined in the context of alternative fiscal packages; for example, how does varying the existing size of the budgetary deficit affect the manner in which defense expenditures affect the macroeconomy? The present study falls in this category.

Causation and Linkages

The main finding (Looney, 1991) from analysis of the causal links between defense and the economy is that the impact of defense expenditures on GDP has shifted over time. In an earlier period (1958–73), defense expenditures had a negative impact on economic growth, while in the latter period (1973–), this impact has shifted to a positive one. Specifically:

- The earlier negative impact appears to have been directly associated with the speed of increase in defense expenditures. That is during periods of rapid mobilization (i.e., the arms race with India[4]), defense expenditures had a negative impact on the economy. That is, increased defense expenditures during this period dampened the growth in GDP.
- After 1973 (and at a time when Pakistani defense expenditures were not modified by developments in India) (Looney, 1991), increased growth in the economy provided additional resources for defense. In turn, defense expenditures stimulated further growth.
- In contrast, there were no strong linkages from nondefense expenditures to economic growth.

Another pattern of significance (Looney, 1991) involves the relationship between defense and nondefense expenditures. There has been a tendency over time for defense expenditures to lead in the timing of government allocations. That is, when defense expenditures change, a corresponding adjustment (again with a lag of several years) occurs in allocations to nondefense activities.

As noted above, a recurring theme in the Pakistani literature is that of government deficits and or expenditures "crowding out"

---

[4]For a quantitative analysis of this arms race and the linkages between Pakistan's defense expenditures and those of India, see Looney (1991).

private investment. This phenomenon has been confirmed by several recent studies (Khan and Iqbal, 1991; Khan, 1988; Burney and Yasmeen, 1989; Haque and Montiel, 1992) that found evidence that government activities have preempted funds that would otherwise have flowed into private capital formation. These patterns have also been the subject of causality analysis (Looney, 1994c). Here attention has focused on the direction of impact between the different broad types of public expenditures (defense, consumption, and general government investment) and potential sources of funding (deficits, domestic borrowing, and foreign borrowing). That is, do expenditures create subsequent deficits and borrowing requirements or, instead, does lax fiscal policy and easy credit encourage expanded expenditures? The main patterns found suggest that:

- Of the three types of government expenditures, those allocated to defense appear to have the most complex budgetary linkages. In one sense the military faces a hard budgetary constraint in the sense that increases in past deficits tend to suppress the expansion in allocations to the military. On the other hand, increased defense expenditures do force an expansion in future deficits.
- This general framework carried over to the borrowing patterns associated with military expenditures. For most measures of domestic borrowing, higher growth rates in funding from the domestic markets tend to suppress the expansion in future military expenditures. These suppressing effects are most important in cases where the rate of borrowing (domestic or foreign) expands over its anticipated (or longer term) growth rate. Still, feedback effects are present whereby military expenditures are, in turn, generally funded in part through both domestic and foreign borrowing.
- Since a large portion of public consumption consists of allocations to the military, the budgetary patterns of this expenditure category are a bit similar to that characterizing defense, particularly consumption's relationship to the fiscal deficit.
- Several important differences do occur, however. The major difference between defense expenditures and public consumption is associated with the manner in which each is funded. Increased growth in public consumption definitely contributes to expanded domestic borrowing requirements over time. Also, the expansion in public consumption was

more constrained than defense during periods of expanded foreign borrowing.

- Of the three types of government expenditures examined, general government investment has the strongest impact on the public sector deficit.
- For all four measures of the deficit[5], increases in general public investment tend to result in expanded fiscal imbalance. While expanded deficits (actual and deviations from the exponential trend) facilitate a future expansion in public investment, this effect is weak compared with the impact of investment on the deficit.
- A clear link also exists between expanded public-sector investment and increased future domestic borrowing requirements. Interestingly enough, few links exist between the growth in public investment and the country's pattern of external public borrowing.

While these findings do not provide a definitive proof of the existence of the crowding-out mechanism in Pakistan, they are quite consistent with what one might find if the phenomena were present. Public investment and infrastructural development appear to have the least-stimulating (and sometimes negative) effect on private-sector investment. This is ironic given that a major purpose of these allocations is to provide a stimulus to follow on private investment. Clearly this effect stems from the large demands placed on the domestic capital market by this type of expenditure.

At the other extreme is defense. Again, a somewhat ironic pattern exists by which expanded military expenditures provide a generally strong stimulus to private investment in large-scale private manufacturing. While the analyses do not let us identify the cause of this stimulus (general Keynesian demand expansion and/or direct linkages to the country's military procurement program), the fact remains that the government has shown restraint in funding defense expenditures once domestic borrowing begin to accelerate.

General public consumption falls somewhere between defense and investment in affecting the private sector's willingness (or ability) to commit capital to manufacturing. While the government

---

[5] Again, only the results for the actual (realized) deficit are presented here.

does fund increased consumption through expanded domestic borrowing, the magnitudes involved are not nearly as great as with investment. Thus, government consumption is still able to provide a net positive stimulus to small scale private investors (who presumably are not as reliant on the domestic capital markets as are their larger scale counterparts).

Budgetary Patterns

While the development of a sophisticated model[6] for analyzing budgetary priorities is beyond the scope of this paper, several principles can be used to obtain an estimate of the relative priority granted the major expenditure items:[7]

- If one budgetary item impacts negatively on another and the second category does not in return impact negatively on the first, then the first is of higher priority.
- Impacts stemming from unexpected increases in a budgetary item reveal more about budgetary priorities than a corresponding change in expected magnitudes. Intuitively this rule assumes that governments reveal their true priorities more in times of uncertainty and/or emergency.
- Deficit changes are of less significance than budgetary share changes, with unexpected changes in the deficit of greater significance in this regard than expected changes.
- Long-run impacts provide greater insights as to priorities than that obtained from an examination of shorter-run patterns. Intuitively long-run patterns reflect continuity in government decision-making, whereas short-run patterns may be affected by random, exogenous events.

Based on these rules, several general conclusions emerge from an assessment[8] of the government's budget:[9]

- Since long-run defense expenditures impact negatively on development and development does not reduce defense over time, defense has a higher priority than development.

---

[6]For example, along the lines proposed in Encarnacion (1970).

[7]As developed in Looney (1994b).

[8]Short run and long run refer to the duration of impact of defense expenditures. For a detailed description of these properties, see Looney (1993).

[9]For a comparison of Pakistan's budget priorities with other regional countries, see Looney (1993).

- Defense has a positive short-run affect on interest payments with increased shares of the budget allocated to interest neutral (in both the short and long run) with regard to the share of the budget allocated to defense. Again, this is a clear-cut case of defense having the higher priority.
- Priorities between development expenditures and interest payments are much more difficult to deduce: Development expenditures reduce (in both the short and long run) the budgetary share going to interest payments. In turn, increased interest payments reduce (again in both the short and long run) the shares of the budget going to the capital account.
- Complicating identification of the development/interest priorities is the fact that in both cases the expected and unexpected deficit terms are negative. Both variables are reduced with increases in the deficits. Furthermore, these patterns occur in both the short and longer run. However, since the deficit terms are stronger in the case of development (with a higher level of statistical significance), it appears that interest payments have a·slightly higher priority than that afforded development.

While the budgetary shares of the other main items of the budget were not directly tested against each other, it is probably safe to conclude that subsidies are next in priority. While their allocations suffer with increases in defense expenditures, they are immune from cuts due to expanded interest payments or development allocations. In addition, the government appears willing to run higher deficits to fund these programs. Administration has the next highest priority. This category appears is immune to cuts stemming from increases in defense, interest, or development. In addition, these allocations do not seem to face cuts during periods of increased deficits.

In conclusion, one may quibble over the importance of administration, social security/welfare, and other expenditures. However, the general picture of Pakistan's budgetary priorities is fairly clear. Defense expenditures have by far the highest priority. While the government may cut these programs when deficits expand more than anticipated, the government is inclined to cut other programs[10] rather than reduce the budgetary share going to the military.

---

[10]The actual expenditure on nondefense categories is also determined by the willingness of the government to increase borrowing and the deficit to fund these programs. See Frederiksen and Looney (1994).

Modeling

In an earlier study (Looney, 1994a) focused on determining the rough magnitudes of the impact of defense (and nondefense) expenditures on the major economic aggregates, it was found that there was a generally positive link between defense and the economy. On the other hand, nondefense expenditures had a negative impact on economic growth. Given this, it was found that the actual impacts of defense and nondefense expenditures can change fairly dramatically as the economic context (i.e., the fiscal deficit) in which these expenditures occur varies.

DEFENSE AND THE MACROECONOMY

Drawing on previous causal and econometric tests, a 33-equation econometric policy model was developed.[11] Here our main concern was identifying the main linkages between defense expenditures and economic activity. These links are assumed to be both direct (as with Keynesian demand creation) and indirect (through possible deficit-induced crowding out of private activity and/or diversion of private savings to the public sector. Concerning the more important individual equations:[12]

- *Gross Domestic Product* is affected mainly by expansion in the private and public stocks of capital, employment, and military expenditures. Here it should be noted that the links between GDP and nondefense expenditures were not statistically significant.
- *Employment* increases with an expanded population together with increments to the stock of public infrastructure.
- *Defense expenditures* expand in line with the general size of the economy. However, allocations to the military compete with infrastructure for funding. In addition, expanded levels of foreign borrowing in the previous year constrain allocations to the military. The same is also true for increased levels of indebtedness to the international institutions.

---

[11] A full description of the model, its estimation, and the underlying database are available from the author upon request.

[12] Two-stage least-squares estimations. See SORITEC (1993) for a description of the procedure. Estimates over different time intervals suggested that the coefficients were stable enough for simulation purposes. Based on the Durbin–Watson statistic, there does not appear to be a serious problem of autocorrelation.

- *Nondefense public expenditures* also expanded in line with GDP. However, allocations to this category were reduced by short-run increases in the defense budget.
- *Gross National Savings*[13] expand with the general growth of the economy. However, these funds are preempted (or crowded out) by the current fiscal deficit, as well as the deficit in the previous year.
- *Private investment in large-scale manufacturing* followed a lag adjustment pattern whereby investment in any one year was undertaken to bridge the gap between investor's optimal and actual capital stocks. The optimal level of private investment was in turn influenced by defense expenditures and ability to attract foreign funding. Again, however, this category of private investment was crowded out by the fiscal deficit.
- *Private investment in nonmanufacturing* activities expanded with the total size of the economy and availability of savings. In contrast to investment in manufacturing, however, this type of investment was discouraged by expanded defense expenditures.
- *Government credit* from the monetary system was also related to past deficits and short-run movements in defense expenditures.
- *Inflation* is largely a function of expanded credit to the public sector, together with movements in the international price level.
- *Public borrowing in the domestic markets* was largely a function of the fiscal deficit. However, the authorities' ability to borrow internationally reduced some of the pressures on the domestic capital markets.
- *Public borrowing in the foreign capital markets* was also largely a function of the fiscal deficit. Again, however, increases in defense expenditures *ceteris paribus* reduced the amount of funding from this source.

To test the general accuracy of the model, the economy was simulated using actual historical data. The results suggest that there are no compounded errors (accumulated errors from each

---

[13] It should be noted that Gross National Savings is used here. Due to the large component of workers remittances, Gross Domestic Savings fluctuates erratically. These remittances are no doubt purely exogenous and as such tend to mask the relationship between government expenditures, the deficit, and the change in savings.

individual relationship). In particular, the key variable GDP was predicted with a high degree of accuracy, the greatest error in recent years being 2.3 percent in 1991. Over the last 10 years the simulation error averaged 1.2 percent.

Although typically volatile, private investment was also simulated with a high degree of accuracy. The average error for the 1981–91 period was only 2.7 percent. For employment, this figure was 1.1 percent. Given that defense expenditures are also affected by a set of noneconomic factors, the model depicted this variable's past values reasonably well, with the average error over the last 10 years equal to 3.1 percent. In any case, given that defense will be treated exogenously (as a policy variable) in the simulations that follow, this error will disappear.

In summary, the model captures the fundamental facing Pakistani policymakers. Looked at in isolation, defense expenditures have tended to positively influence the economy. However, if these expenditures are funded with increased levels of deficit financing, the subsequent crowding out of private investment may actually result not only in increased inflation but, more importantly, in a net negative impact on the economy. The inability of nondefense expenditures other than infrastructure to impact positively on the economy has only compounded this dilemma. In any case, the concern of external creditors over the country's high defense burden will, in all likelihood, increasingly constrain allocations to the military.

Alternative Policies

A major question is whether fiscal deficits have been "too high" in the sense that macroeconomic performance may have been better had they not been that high. To assess this possibility, government expenditures were classified as either defense and nondefense. Using the model described above, we simulated economic environments over the period 1974–91, first, by reducing defense expenditures 10 percent from their actual values (while holding nondefense expenditures at their historical values); second, by lowering nondefense expenditures by 10 percent from their actual values (again maintaining defense expenditures at their historical values); and finally by increasing government revenues by 10 percent with public expenditures set at their historical (actual) values.

The results provide some interesting insights to the country's policy dilemmas. For example, lowering defense expenditures by 10 percent each year:

- Generally reduced the country's Gross Domestic Product. Dividing the 1974–91 period into two equal nine-year groups 1974–1982 and 1983–91, GDP would have been lowered an average of 2.9 percent in the first period and 2.3 percent in the latter.
- Private investment would have been significantly lower in an environment of reduced defense expenditures. On average, private investment would have been reduced by 7.7 percent per year during the 1974–82 period and by 9 percent over the 1983–91 interval.
- In general gross national savings would have improved with lower allocations to the military. This improvement declined over time, averaging 3.0 percent during the 1974–82 period but only 1.8 for the years through 1991.
- Finally, foreign debt would have been considerably lower, particularly because of the cumulative effect of reduced expenditures i.e. while reductions were modest in the first period (2.2 percent) they accelerated to 9.4 percent over the 1983–1991 period.

Reducing non-defense government expenditures produced some divergent results:

- In contrast to defense expenditures, holding non-defense expenditures to 90 percent of their historical values would have provided a mild stimulus to GDP. GDP would have averaged around 1.2 percent higher during the 1974–82 period, increasing to 3.0 percent from 1983 through 1991.
- While private investment would have declined, these reductions were modest, averaging only 1.1 percent during the 1974–82 period and 1.8 percent thereafter.
- The most significant contrast with defense involves the savings rate. This would have increased by 13.2 percent on average (versus 3.0 for defense) during the first period and 15.9 percent (vs. 1.8 percent for defense) for the interval through 1991.
- While foreign debt would have been reduced, the gains in this area would have been much less significant than those

associated with defense cutbacks (0.5 percent vs. 2.2 for defense during the first period and 2.7 vs. 9.4 for the second).

Another logical fiscal strategy would have been to seriously expand the government's revenue base and collection. Here a 10 percent increase over the actual level of revenues would have:

- Gradually increased GDP from 1.1 percent during 74–82 period to 2.2 over the 1983–81 interval.
- On average, reduced private investment by less than 1% per annum.
- Produced a dramatic increase in the country's savings rate with increases averaging 12.4 percent for the first period and 11.7 percent in the second.
- Modestly reduced foreign debt, averaging 0.5 percent during 1974–82 and 1.4 percent through 1991.

To sum up while it is important to stress the problem posed by deficits, obviously for policy purposes just as important an issue is the optimal means of reducing the deficit—clearly some areas of expenditure reduction are more productive than others in achieving this end. The critical question should be: is there an optimal mix of policies that will assure the economy can maintain high rates of non-inflationary, relatively debt free growth during the remaining years of the twentieth century? A new adjustment program is being put in place for this purpose. Clearly this is an opportune time to examine the current program and assess the alternatives open to the government.

FUTURE ALTERNATIVES

Realistically Pakistan's fiscal options are likely to be narrowly constrained by the International Monetary Fund. In November of 1993 the government negotiated an agreement with the IMF to borrow a total of Special Drawing Rights (SDR) 1,200 million ($1,670 million) in a combination of concessionary and market rate loans if it implements reforms and reaches certain economic targets (MEED, 1993).

Policy Constraints and Objectives

The loans will be a combination of an enhanced structural adjustment facility that carries an interest rate of 0.5 percent, an

extended fund facility at market rates and a public-sector adjust-
ment loan (the $350 million standby credit approved by the IMF
in September is not included in the new agreement). As part of
the agreement the government pledges to take measures to meet
the following economic targets (MEED, 1993):

- Reach an average GDP growth rate of 6.5 percent over the
  next three years. GDP was expected to grow by 7.5 percent
  in 1994 depending on the size of the crucial cotton crop,
  compared with a record low of 3 percent GDP growth in
  1993.
- Bring inflation down to 5 percent. The government has fore-
  cast an inflation rate of 8 percent for 1994 compared with
  more than 10 percent in 1993.
- Boost foreign exchange reserves. Reserves fell steadily in
  1993 to reach $222 late that year (compared with $1,000 in
  January of 1993).
- Reduce the burden of foreign and local debt. In late 1993
  the state owed $23,000 million to foreign lenders, of which
  $4,500 million was short term debt.
- Continue the tariff, tax and financial reforms, privatization
  and deregulation policies launched in the late 1980s.

To date, the government has complied with IMF pressure by
increasing energy prices and introducing a controversial agricul-
tural tax as a means of reducing the fiscal deficit (MEED, 1993).
Petroleum and utility prices have been adjusted substantially, to-
gether with the introduction of a mechanism to make domestic
petroleum prices more responsive to changes in international
prices. In addition, the authorities' fiscal program for 1993–94
envisages a reduction in defense expenditures by about one per-
cent of GDP, along with a containment of nonessential expendi-
tures (IMF, 1994).

The authorities have tightened monetary policy through upward
adjustments in the rates of return and reductions in the scope of
concessional and mandatory credit schemes. The framework for
concluding effective monetary policy has been strengthened
through the provision of increased autonomy to the central bank.

Finally, the Pakistan rupee was devalued by 10 percent at the
outset of the 1993–94 fiscal year. This has been followed by a series
of small exchange-rate adjustments implying a total devaluation of
12 percent *via a vis* the U.S. dollar and a real effective depreciation.

Summing up, recent government policy and creditor statements imply that the country will be pursuing a comprehensive set of objectives throughout the remainder of the 1990s. These include:

- A stable rate of GDP growth of between 6.0 percent and 7.0 percent *per annum*—in line with the average rate of growth since 1976.
- Employment growth of 2.8 percent to 3.1 percent—around the rate of growth of population and consistent with past rates of job creation.
- Inflation 5 percent or lower—somewhat below the historical range of 7–8 percent.
- Foreign borrowing to expand at a rate slower than the general expansion in economic activity, that is, around 5 percent or less.
- Defense expenditure to decline to around 4–5 percent of GDP—down from the 6–7-percent range in the late 1980s early 1990s.
- Government deficits to fall to 3–4 percent of GDP—down from the 6-percent figure reached in the early 1990s.
- A general expansion in the share of savings in GDP up toward the range of 18–20 percent—typical values for countries at Pakistan's stage of development.
- An expanded share of private investment in GDP.

Alternative Policy Mixes

The critical question is whether and to what extent these objectives are consistent and attainable. Of particular importance for the current study are the defense expenditure levels that would aid in the attainment of these goals. Again, using the model developed in Appendix B, several policy packages were examined in terms of their ability to improve the country's economic fortunes.

SIMULATION 1: NO MAJOR POLICY INITIATIVES. As a benchmark, the model was solved with only the world rate of inflation set at 3 percent *per annum*, population growth at 3 percent *per annum*, and exports at constant prices assumed to growth at an annual rate of 7.5 percent *per annum*. Here we are assuming no major shifts in past public expenditure or revenue decisions. Under these assumptions:

- The economy (GDP) would continue to expand in the 6.5–7.5 range, with defense expenditures gradually slowing to less than 5 percent *per annum* by the end of the century.
- Despite this slowing-down in defense expenditures, the military burden (defense as a share of GDP) would remain well above 6 percent throughout this period.
- There would be a gradual increase in nondefense expenditures as a share of GDP—increasing from around 16 percent in 1992 to 18.4 percent by 2000. This pattern reflects the rapid expansion in government consumption during the 1980s.
- Employment targets would be met with rates of growth averaging around 3 percent.
- The savings rate would increase, but only very gradually, reaching around 16 percent by the end of the century. This is well below the 18–20 percent assumed to be a precondition for self-sustained growth.
- The fiscal deficit would expand throughout this period with its share in GDP also reaching unacceptable rates.
- Most unsatisfactory of the major indicators is the rate of inflation. With expenditure, savings, and deficits in the ranges noted, inflation would increase during this period, reaching slightly over 20 percent by the end of the century.
- Reflecting these patterns, the external gap would reach nearly 8 percent of GDP, a figure probably unattainable given the likely reluctance of foreign creditors to finance deficits of this magnitude.

SIMULATION 2: ALTERNATIVE DEFENSE EXPENDITURE STRATEGIES. For most developing countries, a logical alternative at this point would be to determine the extent to which economic performance might be improved through cutting defense expenditures. As noted above, however, the consequences of this approach are not clear. On the one hand, defense expenditures appear to provide a positive stimulus to the economy, while, on the other, the deficits associated with increased allocations to the military may be financed in a way that preempts funds that might flow into private investment. To assess the net magnitude of these effects, several alternative defense budgets were examined. In these simulations defense expenditures were assumed to expand at a constant rate (2.5%, 5.0%, and 7.5%) over the period to 2000. As a frame of
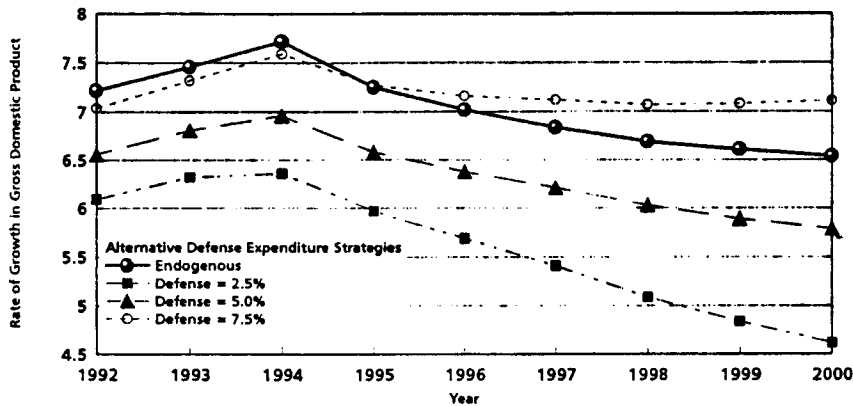
Figure 1. Pakistan: alternative defense—GDP scenarios.

reference, defense expenditures averaged 7.2 percent over the 1981–91 and 1986–91 periods. Under these assumptions (Figure 1):

- The growth in GDP begins to decline after 1994, with the rate of decline largely a function of the expansion in defense.
- With defense expenditures endogenous (determined by the model's equations—Simulation 1), the deceleration in GDP growth is fairly gradual, leveling off at around 6.5 percent *per annum* by the end of the century.
- With defense expanded at a rate of 7.5 percent *per annum* (providing there were no fiscal or inflationary constrains), it would be possible to stabilize the growth of GDP at slightly over 7 percent *per annum*.
- Increases in defense expenditures at a constant 5.5 percent or 2.5 percent would (in the absence of any other policy changes) cause the economy to decelerate fairly rapidly, reaching a growth of about 5.8 percent and 4.6 percent, respectively, by the end of the century.
- The impact of defense expenditures on private investment reflected the anticipated pattern (Figure 2). The share of national resources devoted to private investment increases with lower rates of expansion in military expenditures.
- Concerning the fiscal imbalance (Figure 3), only the deficit associated with a 2.5-percent expansion in defense expenditures is likely to fall within an acceptable range (around 4.8% of GDP). Without simultaneous reforms in tax structure or
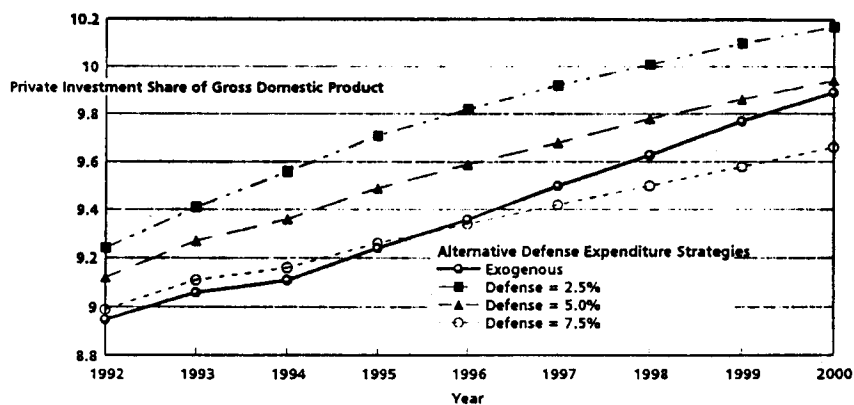
Figure 2. Pakistan: alternative defense—private investment scenarios.

collection, significant reductions in the deficit as a share of GDP are unlikely under any of the proposed scenarios.

- Finally, simply just constraining defense expenditures even at low rates of growth (with no other complementary stabilization measures) would most likely not stave off increases in inflation. As noted above, inflationary pressures have been building for some time. Even at an average annual growth of only 2.5 percent for defense expenditures (Figure 4), it would be difficult for the country to reduce inflation below 10 percent *per annum* during the remainder of this century.
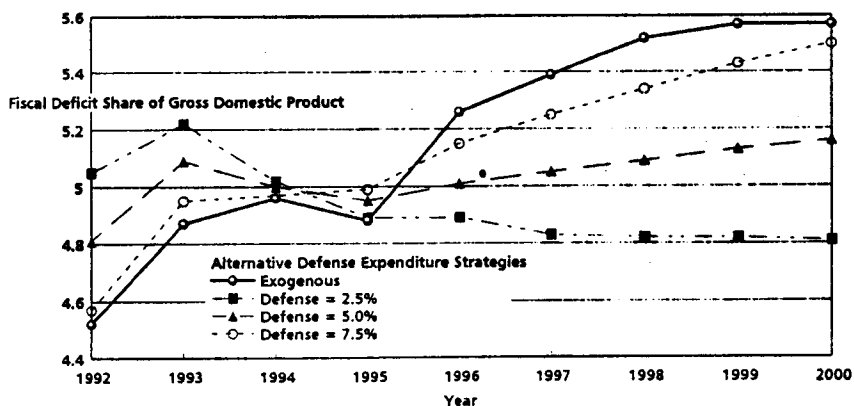

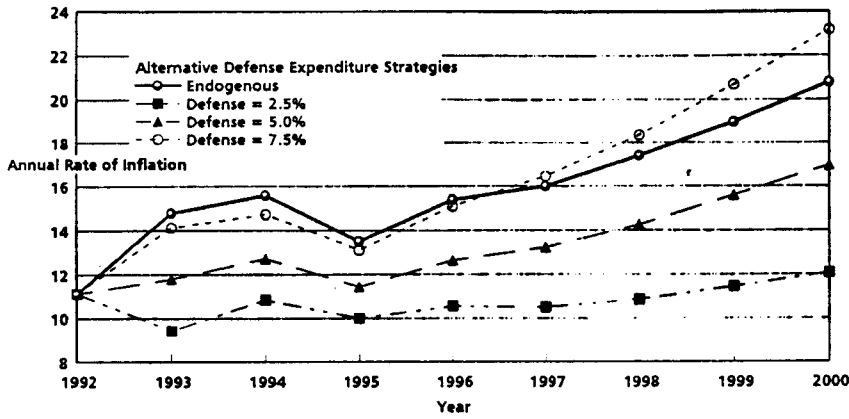**Figure 3.** Pakistan: alternative defense—fiscal deficit scenarios.

Figure 4. Pakistan: alternative defense—inflation scenarios.

These simulations suggest that although the general rate of growth of GDP may increase with defense expenditures, the adverse effects associated with this expansion negate any resort to a defense-led growth model. The real question for policymakers must center on ways of improving economic performance while constraining defense expenditures to lower-than-historic rates of expansion.

Several policy packages are logical:

FISCAL PROGRAM 1. First, while holding defense expenditures at a 2.5-percent rate of growth, the authorities might also constrain foreign borrowing. Given the country's current debt situation and the high proportion of the budget allocated to debt servicing, reduced rates of external borrowing are probably a good objective in and of themselves. Credit from this source is set to grow at 5.0 percent *per annum*. This rate is considerably lower than the average of 22 percent over the 1986–91 period, but in line with the average of 4.6 percent for the 1981–91 period as a whole.

FISCAL PROGRAM 2. To strengthen the country's acute infrastructural bottlenecks, this policy package would shift more resources toward public investment in transport, energy, communications, and the like. Expanded expenditures in these areas would also help to offset the deflationary effects associated with the planned reductions in defense expenditures. As a starting point, infrastructure investment was set at an expansion of 7.5 percent *per annum*,
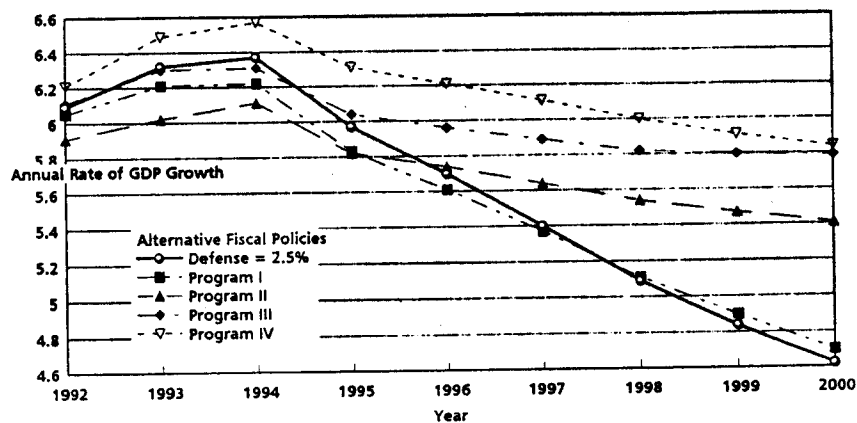
Figure 5. Pakistan: GDP growth under alternative fiscal programs.

up somewhat from the 6.1-percent average over the 1981–91 period and 5.1-percent expansion during the 1986–91 period.

FISCAL PROGRAM 3. This set of policies would add increased revenue collection to Program 2. Here, implementation of the agriculture tax and better tax collection should be enough to sustain an increase in revenues of around 7.5 percent *per annum.* This rate is up some from the 6.8-percent growth during 1981–91 and 5.5 percent for the 1986-91 period.

FISCAL PROGRAM 4. Finally, the last package of reforms would modify Program 3 by constraining nondefense (and noninfrastructure) expenditures to a maximum rate of expansion of 7.5 percent *per annum.* As noted above, one of the main causes of the country's current fiscal crisis has been an acceleration in nondefense expenditures. These averaged 8.4 percent during 1981–91, accelerating to 9.4 from 1986–91.

Main Findings

Of particular interest is the manner in which these packages might improve economic performance over that likely to occur simply through constraining the growth in defense expenditures at 2.5 percent *per annum.*

GROWTH. GDP growth gradually improves as the fiscal programs are made more comprehensive (Figure 5). That is, simply
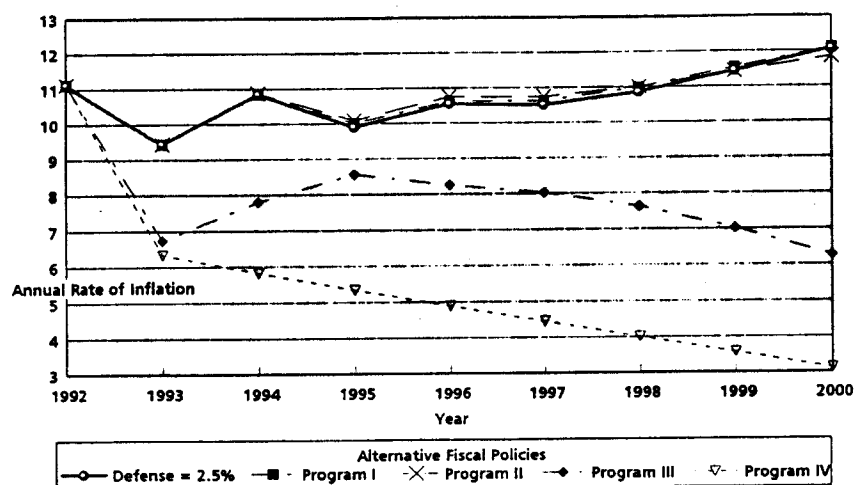
Figure 6. Pakistan: inflation under alternative fiscal programs.

restraining foreign borrowing does not significantly improve the general rate of expansion of the economy. Nor is there little difference between the growth path obtained through carrying out Program 1 and that of simply expanding defense expenditures with foreign borrowing being determined though the models' relationships. There are several other patterns of interest:

- While Program 4 yields the highest rate of growth throughout the 1990s, it converges with Program 3 by the end of the century.
- Program 2 starts out the 1990s with relatively low rates of growth. However, after 1994–95 this program's performance improves significantly over that associated with Program 1.

INFLATION. Inflationary pressures proved relatively hard to dampen (Figure 6). Constraining defense expenditures to a 2.5-percent growth path, together with restricting foreign borrowing (Program 1) and increasing infrastructure investment (Program 2) while keeping the rate of inflation considerably below that of the purely endogenous forecast, were unable to put the economy on a declining inflation path. This leads to several important policy implications:

- A clear ingredient of any anti-inflationary program must be tax reform. Even expanding government revenues at 7.5 percent *per annum* (Program 3) was not sufficient to reduce inflation below 6 percent *per annum*.
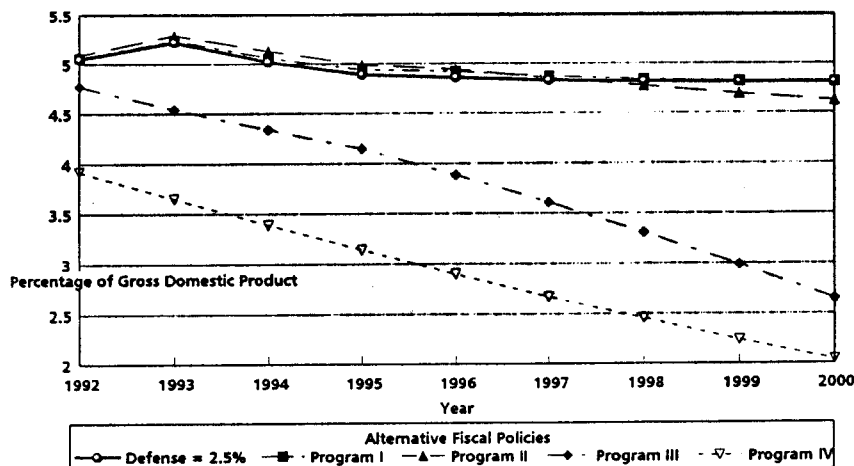
Figure 7. Pakistan: the budget deficit under alternative fiscal programs.

- However, supplementing tax reform with constraints on non-defense expenditure (Program 4) quickly suppressed inflation. This policy package lowered inflation below 5 percent through much of the period under consideration.

BUDGET DEFICIT. The pattern of budget deficits was similar to those characterizing inflation. Without tax reform, the programs were not capable of significantly reducing the share of the fiscal deficit in GDP. Specifically, with constrained defense expenditures at 2.5 percent, Program 1, and Program 2 all stabilized the deficit at around 5.0 percent (with Program 2 eventually reducing this ration to 4.5 at the end of the century).

On the other hand, fiscal performance improved dramatically with expanded revenues (Program 3) and constrained nondefense expenditures (Program 4). Specifically, by 2000, Program 3 brought the deficit down to around 2.6 percent of GDP (Figure 7), and Program 4 brought the deficit down further toward 2.0 percent.

SAVINGS. As noted, increasing the rate of national savings must be a key objective in any fiscal program. In this regard, all five packages produced some improvement in this aggregate. Again, with the results (Figure 8) from the defense expenditure expansion of 2.5 percent, Program 1 and Program 2 were fairly similar, with savings increasing from about 14.5 percent in 1992 to slightly over 17 percent by 2000.
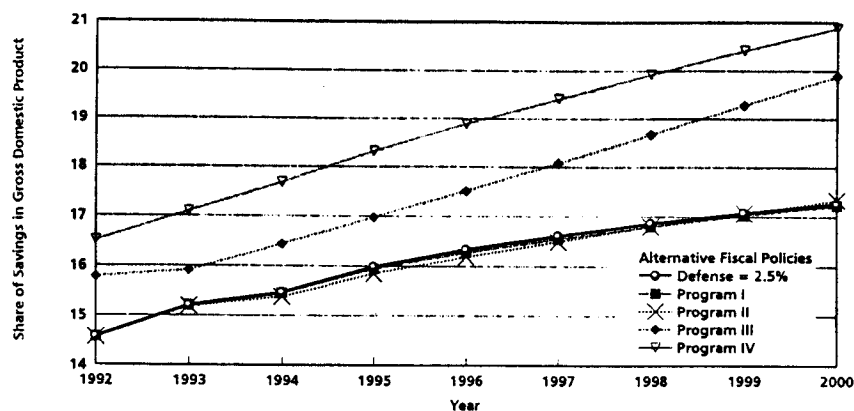
Figure 8. Pakistan: savings performance under alternative fiscal programs.

Tax reforms, however, contributed greatly to this objective, raising the saving rate to nearly 19 percent at the end of the period. Finally, constraints on nondefense expenditure expanded this rate a further 2 percent to slightly under 21 percent by 2000.

PRIVATE INVESTMENT. Finally, increasing the share of national resources invested by the private sector is possible under all of the programs examined (Figure 9). Here improvements up to around 10.2 percent (from around 9.2% in 1992) are easily obtained. As with the other macroeconomic aggregates, however, a
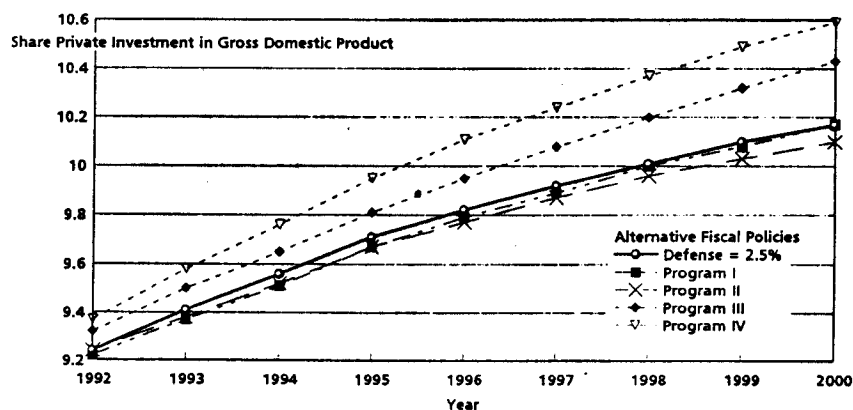

Figure 9. Pakistan: private investment under alternative fiscal programs.

significant improvement in private investment depends critically on the willingness of the government to reduce its deficits.

CONCLUSIONS

In summing up, the fiscal pattern that developed in Pakistan during the 1980s and extending to the 1990s is not sustainable. An overexpansion in expenditures, both for defense and nondefense purposes, together with sluggish revenues and excessive foreign borrowing, have created a situation in which further growth will be increasingly constrained by debt servicing, inflation, and shortages of domestic savings for private investors.

However, given the complex nature of defense expenditures in both stimulating and suppressing growth, budgetary reductions in this area in and of themselves are unlikely to improve the country's economic performance. In fact, rapid reductions in defense are likely to impair the situation even further. On the other hand, modest efforts in tax reform are by far the most effective means at restoring fiscal stability.[14] The optimal policy mix is one of tax reform together with defense-expenditure expansion constrained in the 2.5-percent range. Unforeseen events aside, this package would enable the country to meet the goals established by itself and its major creditors in restoring a rapid, self-sustaining growth in an environment characterized by a declining defense burden.

REFERENCES

Ahmed, I. (1994) State Military and Modernity: The Experience of South Asia, *Contemporary South Asia* 3(1):53–66.

Blum, C. (1994) Can Bhutto Keep Her Promises? *Middle East Economic Digest*, July 1, 1994: p. 2.

Bokhari, F. (1994) Pakistan Falls Short of Growth Target, *Financial Times*, May 20, 1994: p. 5.

Burney, N., and Yasmeen, A. (1989) Government Budget Deficits and Interest Rates: An Empirical Analysis for Pakistan, *The Pakistan Development Review* 28(4):971–980.

Encarnacion, J. (1970) Some Implications of Lexicographic Utility in Development Planning, *The Philippine Economic Journal* 2:231–240.

Frederiksen, P.C., and Looney, R. (1994) Budgetary Consequences of Defense Expenditures in Pakistan: Short-Run Impacts and Long-Run Adjustments, *Journal of Peace Research* 31(1):11–18.

Granger, C.W.J. (1988) Some Recent Developments in a Concept of Causality, *Journal of Econometrics* 39:199–211.

---

[14] A similar conclusion is reached in Khan (1989).

Haque, N.U., and Montiel, P.J. (1992) Fiscal Policy Choices and Macroeconomic Performance in the Nineties. In *Financing Pakistan's Development in the 1990s* (A. Nasim, Ed.). Karachi: Oxford University Press, pp. 101–162.

International Monetary Fund (1994) *IMF Survey*. March 7, 1994: pp. 76–77.

Kemel, A.R. (1989) Fiscal Imbalances as an Obstacle to Privatization Effort, *The Pakistan Development Review* 28(4):1009–1019.

Khan, A.H. (1988) Macroeconomic Policy and Private Investment in Pakistan, *The Pakistan Development Review* 27:277–291.

Khan, A.H. (1989) Budgetary Deficit: Options and Limitations, *Pakistan Institute of Development Economics, PIDE Tidings* 1(3):19–22.

Khan, A.H., and Iqbal, Z. (1991) Fiscal Deficit and Private Sector Activities in Pakistan, *Economina Internazionale* 44(2–3):182–190.

Looney, R.E. (1991) Defense Expenditures and Economic Performance in South Asia: Tests of Causality and Interdependence, *Conflict Management and Peace Science* 11(2):37–68.

Looney, R.E. (1993) The Budgetary Impact of Defense Expenditures in the Middle East, *The Middle East Business and Economic Review* 5(2):38–49.

Looney, R.E. (1994a) Budgetary Dilemmas in Pakistan: Costs and Benefits of Sustained Defense Expenditures, *Asian Survey* 34(5):417–429.

Looney, R.E. (1994b) Defense Expenditure, Allocations for Development and Debt Servicing: An Analysis of Pakistani Budgetary Priorities, 1976–1992, *Journal of South Asian and Middle Eastern Studies* 17(4):68–89.

Looney, R.E. (1994c) Defense Expenditures, Investment and Crowding Out: Problems of Capital Formation in Pakistani Manufacturing, *Journal of Third World Studies* (forthcoming). 11(2):292–316.

MEED (1993) IMF Agrees to Lend $1.7 Billion, *Middle East Economic Digest*. November 26, 1993: p. 34.

Rashid, A. (1994) Getting Tough: Pakistan's Bhutto Tries for Fiscal Austerity, *Far Eastern Economic Review*, June 23, 1994: p. 61.

SORITEC Integrated Econometric and Statistical Analysis Language, Version 6.6 Reference Manual (1993) Springfield, VA: Sorites Group, Inc.

World Bank (1991) *Pakistan: Current Economic Situation and Prospects, Report No. 9283-PAK*. Washington, DC: The World Bank.

Zellner, A. (1988) Causality and Causal Laws in Economics, *Journal of Econometrics* 39:7–21.